CBEFF

Common Biometric Exchange File Format

CBEFF
Technical
Working
Group
Update

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CBEFF Topics

- CBEFF Vision
- CBEFF Recap
- Patrons and Clients
- Registering Biometric Owners and Types
- CBEFF Compliant formats
- Augmented CBEFF
- What's Next

CBEFF Vision

- Facilitating <u>Cross Technology</u> Interoperability
- Providing Compatibility
- Speeding Development

CBEFF in a Nutshell

Standard Biometric Header

Digital Signature

- Defines <u>Basic Fields</u> used by Biometric Data
  - Security
  - Useful Biometric Processing Info
  - Biometric Data
- Doesn't constrain the encoding of data
- Registration of Biometric Data via IBIA
  - Registration of Biometric Data via IBIA
- Allows for new adaptations
- CBEFF Compliance can be met by "Patrons and Clients" model

Common Biometric Elements (Data Fields)
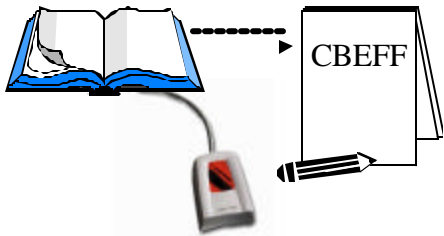
Mandatory Field

Optional Field

- **Security Options**
- Integrity Options
- **Header Version**
- Biometric Type
- Data Type
- Purpose
- Quality
- Creation Date
- **Format Owner**
- **Format Type**
- **Biometric Specific Memory Block (BSMB)**
- Signature

Patrons & Clients

CBEFF Patron Examples:
- BioAPI v1.0 specification
- draft ANSI Standard X9.84.
- ISO SC-17 (7816-11)

CBEFF

CBEFF Patron: An organization that has defined a standard or specification incorporating biometric data object that meets CBEFF requirements.

CBEFF Client: An entity that defines a specific biometric data structure (e.g., a BSMB format owner) that meets CBEFF requirements. This would include any vendor, standards committee, working group, or industry consortium that has registered itself with IBIA and has defined one or more BSMB format types.

CBEFF Client Examples:
- Saflink corp.   - Bioscript Inc.   - Visionics Corp.
- Infineon Technologies Ag.   - Iridian Technolgies Inc
- Veridicom Inc.   - Cyber Sign Inc. - eCryp Inc   - etc.

CBEFF Patron's & Clients
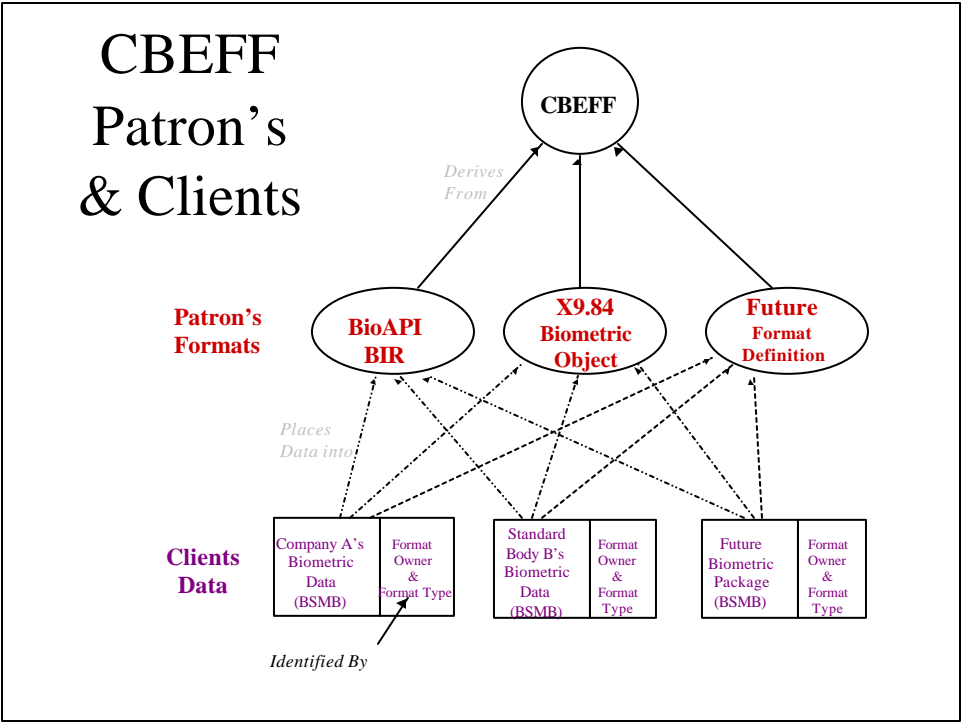
Format Owner and Types

- IBIA will be the registration authority
  - Web Enabled registration:
    http://www.ibia.org/formats.htm
- x9-84 OBJECT IDENTIFIER ::= {iso(1) identified-organization(3) tc68(133) country(16) x9(840) x9Standards(9) x9-84(84) IBIA(4) x
  - CBEFF(1)
    - Format Owner (xx)
      - Format Type (xx)}

Adding new formats

- **Allows new formats when existing ones won't work**
  - New technologies
  - Limited resource applications
- **New Format Definitions required**
  - "Domain of Use" definition
  - New fields
  - Reference Documentation
  - Time line

Current List of CBEFF Compliant Formats

- Basic Minimal Format
  - Legacy products
- BioAPI Biometric Information record (BIR)
  - All BioAPI complaint products
- X9.84 Biometric Object
  - Secure transmission of Biometric data
- Draft ISO 7816-11 **Identification cards - Integrated circuit(s) cards**
  - **with contacts — Part 11: Personal verification through biometric methods**
  - Biometrics with smart cards

New Fields

- Validity Period (Valid from, Valid until)
  - Adopt X9.84 definition:
  - YYYYMMDDHHMMSSZ

Data Origination

- How to identify the originator of proprietary data generated by other than the format owner?
- Format Owner does not specify product creating the biometric data. Examples:
  - Originator could be same as format owner
  - Originator cross licensees from from format owner
  - Originator uses a standard format
- Add Creator Field with product identifier (PID) assigned by IBIA.

Challenge/Response

- Reference Data
  - Examples:
    - User prompt Text
      - "Place index finger on reader"

Payload

- Reference data Specified by the Patron
  - Examples:
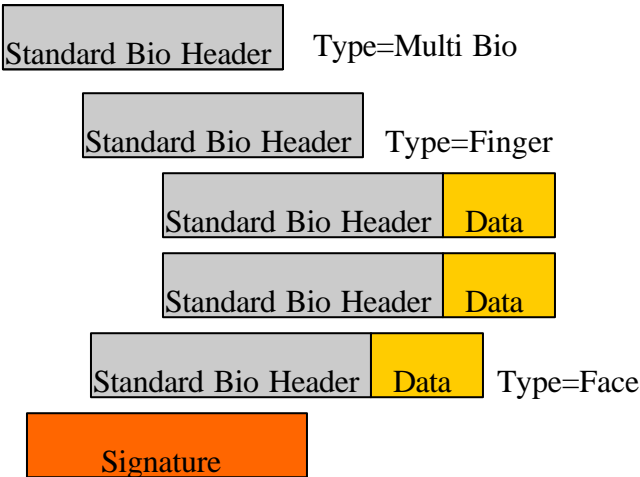   - Filename
    - Database item
    - URL

BSMB Definitions

Standard Biometric Header

BSMB

Digital Signature

- BSMB could include
  - Standard/Proprietary Data
  - Challenge Response
  - Payload
- How to handle multiple data types and/or multiple data objects
  - Nesting CBEFF structures

Nesting

Most fields can be used by both the top level SBH and lower level SBHs

Standard Bio Header — Type=Multi Bio

Standard Bio Header — Type=Finger

Standard Bio Header | Data

Standard Bio Header | Data

Standard Bio Header | Data — Type=Face

Signature

Nesting Advantages

- BSMBs can make use of existing field definitions
- Handles Multiple Biometric type or Multiple instances of a single biometric type
- When used with Format Owner/Product ID it can handle the separation Standard and Proprietary data

ISO Proposed Definitions

- Standard field
- Proprietary field
- Other fields

Tag	L	Value		
7F2E	x	Biometric reference data template		
		DOs which may be embedded in the biometric reference data template		
		Tag	L	Value
		'80', 'A0'	x	Challenge or challenge template for user prompting, see table A.6. This DO is only relevant for dynamic biometric types.
		'81', 'A1'	x	Standard biometric data (primitive / constructed)
		'82', 'A2'	01'	Proprietary biometric data (primitive / constructed)
		'A0'	'07'	Challenge template
		'84'	'10'	DOs which may be embedded in the challenge template
				Tag L Value
				'90' x Challenge qualifier '00' = No information given '01' = ASCII coding (default) '02' = UTF8 Other values RFU
				'80' x Challenge

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Questions?

ISO 7816-11

ISO/IEC 7816 consists of the following parts, under the general title
Information technology — Identification cards -
*Integrated circuit(s) cards with contact*s:

Part 1: Physical characteristics,
Part 2: Dimensions and location of contacts,
Part 3: Electronic signals and transmission protocols,
Part 4: Interindustry commands for interchange
Part 5:Numbering system and registration procedure for application identifier
Part 6: Interindustry data elements
Part 7:Interindustry commands for Structured Card Query Language (SCQL)
Part 8: Security related interindustry commands
Part 9: Additional interindustry commands
Part 10: Electronic signals and answer to reset for synchronous cards
Part 11: Personal verification through biometric methods